May 16, 1939. D. A. MEEKER ET AL 2,158,904

WASHING MACHINE

Filed May 22, 1933 2 Sheets-Sheet 1

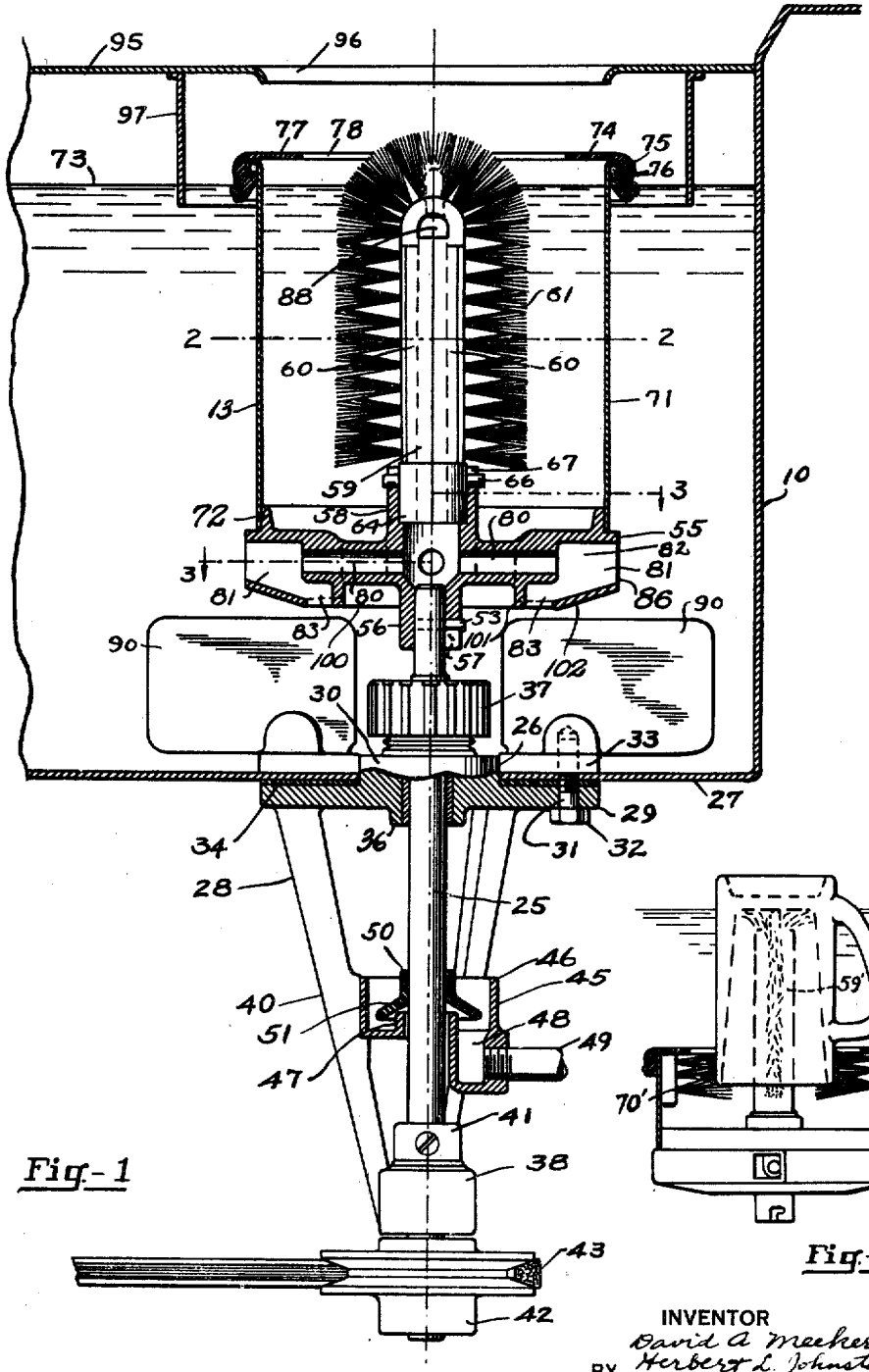


Fig.-1

Fig.-6

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WASHING MACHINE

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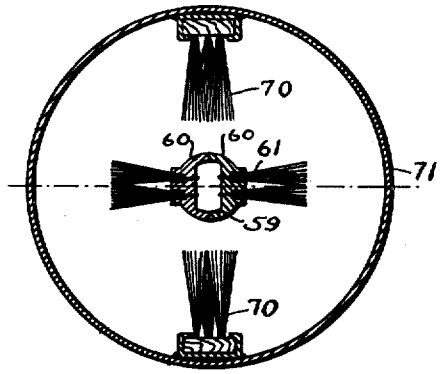


Fig.-2

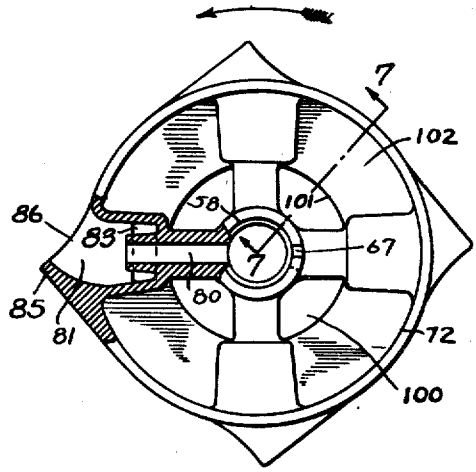


Fig.-3

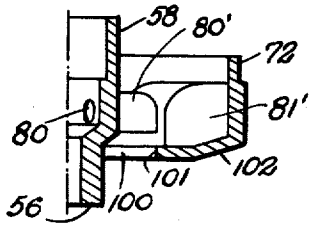


Fig.-7

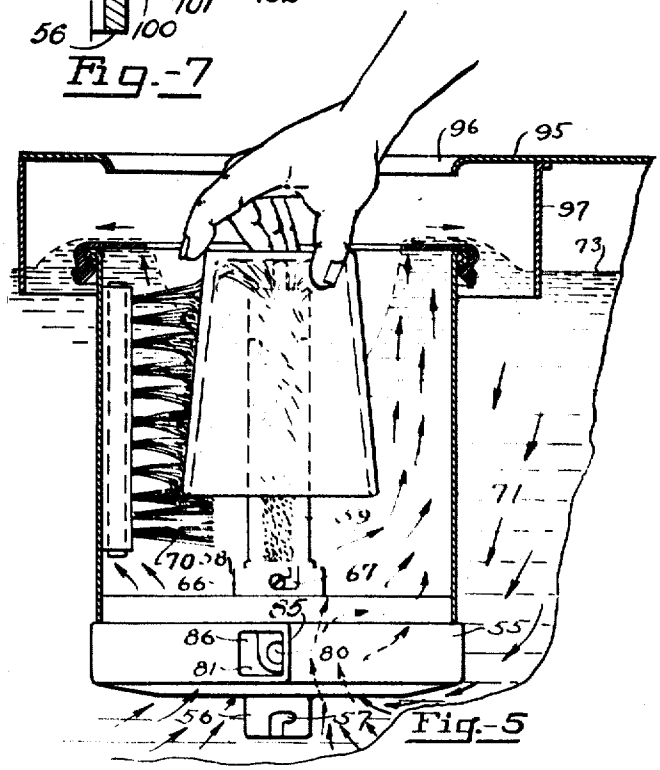


Fig.-5

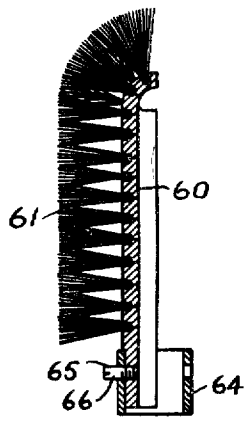


Fig.-4

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Patented May 16, 1939 2,158,904

UNITED STATES PATENT OFFICE

2,158,904

WASHING MACHINE

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Application May 22, 1933, Serial No. 672,130

26 Claims. (Cl. 15—76)

This invention relates to washing machines, and more particularly to washing machines for glasses, tumblers and the like.

One of the principal objects of the invention is the provision of a washing machine for cleansing glasses, tumblers, and like articles which is simple in construction, effective and efficient in operation to wash both the outside and inside of the articles.

Another object of the invention is the provision of such a glass or tumbler washing machine having brushes adapted to be telescoped by a tumbler, and means for causing the washing fluid to fill the interior of a tumbler during the brushing action.

Other objects and advantages of the invention will be apparent from the following description, the accompanying drawings and the appended claims.

In the drawings which disclose a preferred embodiment of the invention,

Fig. 1 is a vertical sectional view of a washing machine embodying the present invention;

Fig. 2 is a transverse section as indicated at 2—2 of Fig. 1;

Fig. 3 is a horizontal section as indicated by the section line 3—3 of Fig. 1;

Fig. 4 is a fragmentary vertical sectional detail of one of the brushes;

Fig. 5 illustrates the washing operation;

Fig. 6 is a fragmentary view of the washing unit having a somewhat different proportioning of parts; and

Fig. 7 is a fragmentary vertical section along the line 7—7 of Fig. 3.

In glass washing machines wherein a tumbler or like article is submerged in washing fluid, and while held in an inverted position is subjected to a rotary brushing action, it is difficult to thoroughly cleanse the interior of the article because the air entrapped in the inverted tumbler and the centrifugal action of the rotating brushes prevent the entrance and circulation of washing fluid through the interior of the article being cleansed. The drawings, in which like characters of reference designate like parts throughout the several views thereof, illustrates a washing machine which is particularly adapted for effectively cleansing tumblers and like, and which provides for thorough cleansing of the interior of such articles by subjecting the interior to suction so that a positive circulation of washing fluid therein is obtained. The washing machine illustrated is arranged to provide for both washing and rinsing of tumblers and like utensils. As shown, the machine comprises a suitable metal or other form of tank or liquid container 10, carried upon suitable supporting legs, not shown, so that the machine is elevated to a convenient height for the operator. The washing unit designated generally by the numeral 13 stands partially submerged within the washing tank 10 and arranged so that an inverted tumbler may be readily inserted. The unit 13 is provided with brushes for sweeping both the exterior and interior of a tumbler.

The washing unit is mounted upon a rotatable spindle 25 which extends up into the tank as is illustrated in Fig. 1. As shown, the spindle 25 extends vertically through an opening 26 provided in the bottom wall 27 of the washing compartment tank. The tank opening is closed by the spindle support 28 which comprises a plate 29 having a centrally extending hub 30 which projects through the tank opening 26. The plate has spaced holes 31 for the insertion of screws 32 that pass through the tank wall and into a bolting ring 33 on the interior of the tank. A gasket 34 between the tank and plate serves to seal the tank opening upon drawing up the holding screws 32. The spindle support provides spaced bearings for free rotation of the spindle 25. A bearing 36 is carried by the plate part 29 directly beneath the packing gland 37. A second bearing 38 is spaced from the plate 29 by provision of conecting ribs 40. The axial positioning of the spindle 25 is maintained by provision of a thrust collar 41 above the lower bearing 38 and a drive pulley 42 beneath this bearing. The pulley 42 carries a belt 43 connecting to a suitable source of power, which may be an electric motor.

In order to catch and drain away any shaft leakage so that it will not drip on the driving mechanism a cup like retainer 45 is carried by the spindle support ribs 40 and encircles the spindle 25 beneath the upper bearing 36. This retainer is constructed with an outer cylindrical wall 46 of substantial height and an inner concentrically related vertical wall 47 spaced from the spindle and of somewhat less height than the outer wall. An inclined gutter 48 is formed with a threaded connection for attachment of a waste pipe 49. A close fitting collar 50 is positioned on the spindle 25 adjacent the retainer and is provided with an outwardly flaring skirt 51 that stands within the confines of the retainer outer wall 46. Any leakage along this shaft is thrown by the collar into the retainer from which it is carried away.

The upper end of the spindle is arranged to receive the washing unit in telescoping engagement, and is provided with a laterally extending

stud 53 which affords a driving engagement for the washer unit. The washer unit is arranged so that all of the brushes are carried by a common supporting member 55. As shown, brushes are arranged to sweep both the exterior and the interior of a tumbler. Means are provided whereby the interior of a tumbler telescoping the brushes is subjected to suction whereby washing fluid is caused to flow up to fill the interior of the glass during the washing operation. The suction is created by an ejector which is built into the brush supporting member 5.

As shown, the brush supporting member 55 is constructed as a unitary casting having a downwardly extending axial sleeve 56 that is receivable upon the spindle end, and a slot 57 that is engageable with the spindle lug 53. The upper end of the member 55, which is a continuation of the sleeve, has a socket 58 for reception of the inner brush 59. The socket 58 communicates with the ejector. The inner brush has a hollow stem or body portion with one or more openings therein. As shown, the brush stem has openings 88 at its upper end to afford communication with the space on the interior of a tumbler.

The inner brush 59 is shown constructed of segmental bristle carrying parts 60 of arcuate section. These parts are proportioned so that they may be assembled to form the hollow stem of the inner brush. As shown, the segmental parts 60 are arranged to hold tufts of bristles as indicated at 61. The bristles project substantially perpendicularly from the face of a segmental member and extend for substantially the full length of this member to the extreme upper end thus affording a distribution of bristles such that all parts of the interior of a tumbler are subjected to a sweeping action during the washing operation. The brush segments are assembled by application of a close fitting ferrule 64 over the lower ends of the segments. The segments are held in place by the provision of screws 65 which are proportioned to afford a stud projection 66 from the ferrule in assembly. The ferrule 64 and stud projections 66 form a bayonet latch that is engageable with the brush support sleeve 58 which has bayonet notches 67 for reception of the studs 66. The brush is thus readily attached to the supporting member in the position of use.

Additional brushes which serve to sweep the exterior of a tumbler, and which are indicated by the numeral 70, are mounted within a cylindrical sleeve 71 which extends axially of the spindle and which is attached to the supporting member 55 by engagement with an annular rim 72. The sleeve 71 extends upwardly from the supporting member 55 and terminates some distance above the normal liquid level of the washing tank which is indicated by the numeral 73. A soft rubber ring 74 is applied to the upper end of the sleeve. As shown, this ring comprises an annular flange 75 which overlies the bead 76 at the top of the sleeve, and an inwardly extending flange 77 having an opening 78 of such diameter that a tumbler may be readily inserted into contacting engagement with the brushes.

As is shown in Fig. 5, the outer brushes 70 extend for substantially the full length of the enclosing sleeve 71 so that substantially the entire outer surface of a tumbler is subjected to the sweeping action of the bristles during washing. This construction may be modified somewhat to take care of glassware having a handle or other projection which would prevent its ready insertion within the sleeve of the construction illustrated in Fig. 1. As is shown in Fig. 6, the sleeve 71' carried by brush supporting member 55' is relatively short and has short brushes 70' of such extent that only a portion of the tumbler adjacent the open end is brushed.

As mentioned above, the ejector which is constructed within the brush supporting member is connected with the inner brush of the washer. This is accomplished by extending the socket 58 downwardly into communication with radial passages 80 which terminate adjacent the periphery of the supporting member 55. The passages 80 are shown as being four in number, each of which opens into an elbow shaped passage 81 having an enlargement 82 which affords a flow path outwardly with respect to the end of the associated passage 80. The portions containing the passages 80, the elbow passages 81 and enlargements 82 are illustrated, in perspective, in Fig. 7 by the numerals 80' and 81' respectively. The passages 81 have inlet or suction openings 83 in the lower part of the member 55 some distance inwardly from the periphery thereof. The passages 81 open as indicated at 86 in the periphery of the supporting member 55 just to the rear of outwardly flaring projections 85. As is shown in Fig. 3, the brush supporting member is adapted for rotation in a counterclockwise direction. Just ahead of each opening 86 the member 55 is flared outwardly as shown at 85 so that upon rotation a circulation is induced which enters the openings 83 and passes outwardly through the openings 86. The proportioning of these parts is such that an ejector action is afforded which creates suction within the passages 80 that are in communication with the hollow stem of the brush 59.

In order to restrain the tendency for the fluid adjacent the rotating parts to assume a rotary motion under influence of the rapidly rotating washing unit, which would thus diminish the effectiveness of the operation, baffles are provided adjacent the ejector inlets 83. As shown, the bolting ring 33 is provided with upwardly extending plates 90 which stand radially with respect to the spindle 25 and are positioned beneath the brush supporting member 55. These plates extend outwardly for some distance beyond the diameter of the washing unit and influence the movement of the washing fluid adjacent the lower part of the unit in a manner so as to reduce prerotation.

The washing compartment is shown as having a cover 95 some distance above the normal fluid level with an opening 96 in alignment with the washing unit therebeneath. The opening 96 is of such size as to permit insertion of an inverted tumbler within the washing unit while held in the hand of the machine operator. A downwardly depending annular flange 97 extends from the cover 95 to beneath the liquid level. This flange is spaced from and encircles the brush sleeve 71.

Upon inserting a tumbler within the washing unit so that the tumbler telescopes the rotating inner brush 59, suction acts to withdraw the entrapped air from within the tumbler and to concomitantly create a circulation of wash water upwardly into the interior of the tumbler. An upward circulation of washing fluid occurs over the exterior of the tumbler as well. The rotating shell and attached outer brushes 70 set up a centrifugal action which causes the washing fluid to rise upwardly within the shell to assume the usual paraboloid shape, and to thus overflow the lip of the ring 74 with resultant upward circulation through the glass washing zone. The

circulating fluid enters the washing unit through the open bottom formed by the member 55, being withdrawn from the subsurface fluid in the tank and caused by the impelling action of the rotating parts of the member 55 to flow upwardly through the open bottom, the fluid thus withdrawn discharging through the spaced upward discharge opening back into the fluid in the tank; the brushes, during rotation, effecting a supplementary circulating action upon such fluid within the zone of the brushes. As shown, an inlet for the circulating water is afforded within the brush supporting member 55 which has an opening 100 surrounding the socket 58 and defined by the inner edge 101 of a ring 102 that extends inwardly from the rim 12. The flow of fluid through the opening 100 is subjected to the baffling action of the plates 90.

Effective cleansing of a tumbler is assured by the continuous upward circulation of washing fluid over both the exterior and interior surfaces of the tumbler during the washing operation. By withdrawing the entrapped air from within the inverted tumbler, and by setting up a centrifugal action on the fluid around the tumbler, which fluid is caused to flow through the lower opening 100, the rotating brushes are maintained submerged so that during the entire washing operation the sweeping action of the brushes is supplemented by a continuous flow of washing fluid upwardly from the lower inlet opening to be discharged back into the tank through the upper, discharge, opening 78,—the arrangement of parts adjacent the lower inlet opening functioning as a pumping means to withdraw the cleaner sub-surface fluid from within the tank and causing it to flow through the lower inlet opening upwardly and into the brush zone and to be discharged back into the tank through the upper discharge opening.

The circulation of washing fluid through the interior of a tumbler and the interior of the inner brush, which begins as soon as the entrapped air is withdrawn, further aids in the cleansing action by maintaining the brush bristles clean so that any sediment or like material which has been dislodged during a washing operation may not cling to the bristles and thus be carried over to a subsequent washing. By withdrawing the fluid from the brush top to create a circulation upwardly the entire brush is subjected to this cleansing action.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

What is claimed is:

1. In a washing machine for tumblers and the like, a tank for washing fluid, vertically extending rotary brushing means in said tank adapted to receive a tumbler in inverted telescoping engagement with the lower open end submerged, and pumping means operable with the brushing means for circulating the washing fluid upwardly along the exterior and interior surfaces of the tumbler wall toward the tumbler bottom.

2. In a washing machine for tumblers and the like, a tank for washing fluid, rotary brushing means in said tank adapted to receive a tumbler in telescoping engagement, suction means effective on the interior of the tumbler for causing the washing fluid to fill the interior of the tumbler, and centrifugally acting means for circulating washing fluid upwardly on the exterior of the tumbler.

3. In a washing machine for tumblers and the like, a tank for washing fluid, a brush positioned within the tank and adapted to be telescoped by a tumbler, and means for subjecting the interior of a telescoped tumbler to suction for circulation of washing fluid therein.

4. In a washing machine for tumblers and the like, a tank for washing fluid, a brush positioned within the tank and adapted to be telescoped by a tumbler, said brush comprising a hollow stem having an opening therein, and means for subjecting the brush stem to suction for circulation of washing fluid on the interior of a telescoped tumbler and through the brush stem.

5. In a washing machine for tumblers and the like, a tank for washing fluid, a vertically extending brush in said tank adapted to be telescoped by an inverted tumbler, said brush having a hollow stem with an opening adjacent the top of the stem, and suction means connecting with the brush stem to withdraw entrapped air and to concomitantly circulate washing fluid within the interior of a telescoped tumbler and through the brush stem.

6. In a washing machine for tumblers and the like, a tank for washing fluid, means for subjecting a tumbler submerged in the tank to a rotary brushing action, and suction creating means effective on the interior of the tumbler for circulating washing fluid within the interior of the tumbler.

7. In a washing machine for tumblers and the like, a tank for washing fluid, means for subjecting a tumbler submerged in the tank to a rotary brushing action, and suction creating means communicating with the interior of the tumbler at the bottom thereof for causing the washing fluid to flow into and to fill the interior of the tumbler during the brushing action.

8. In a washing machine for tumblers and the like, a tank for washing fluid, a brush in said tank, said brush comprising a rotatable hollow stem having an opening therein and bristles adapted to sweep the interior of a telescoping tumbler, means for rotating the brush, and means rotatable with the brush to subject the brush stem to suction for circulation of washing fluid within a telescoped tumbler and through the brush stem.

9. In a washing machine for tumblers and the like, a tank for washing fluid, a brush in said tank, said brush comprising a hollow stem having an opening therein and bristles adapted to sweep the interior of a telescoping tumbler, means for rotating the brush, an ejector operable with the brush and connected thereto for subjecting the hollow brush stem to suction for circulation of washing fluid within a telescoped tumbler.

10. In a washing machine for tumblers and the like, a tank for washing fluid, a rotatable shaft in said tank, an ejector attached to said shaft, said ejector comprising an open ended passage which is subjected to suction upon rotation of the shaft, a brush adapted to be telescoped by a tumbler, said brush comprising a hollow stem having an opening therein, and means for removably attaching the brush to the ejector with the hollow stem and ejector passage in communication for circulation of washing fluid within a telescoped tumbler and through the brush stem.

11. In a washing machine of the character de-

scribed, a tank for washing fluid, brushing means in said tank adapted to receive a tumbler in telescoping engagement, fluid circulating means comprising a flow communicating fitting adapted for connection to and support of said brushing means, said brushing means comprising segmental bristle holding means of arcuate section adapted for assembly as a fluid conveying brush unit in which the segmental parts are joined as a hollow stem, said hollow stem having an opening therein to the interior of a telescoped tumbler for circulation of the washing fluid therethrough and through the tumbler, a ferrule for the segmental parts, and means for anchoring the segmental parts in assembly to the ferrule, said anchoring means comprising stud projections from the ferrule, said stud projections and ferrule comprising a bayonet latch for attachment of the brush, and bayonet latching means on the flow communicating fitting adapted for engagement by the bayonet latch of the brush for circulation of fluid through the tumbler.

12. In a washing machine of the character described, a tank for washing fluid, brushing means in said tank adapted to receive a tumbler in telescoping engagement, rotatable brush supporting means comprising fluid circulating means, said brush supporting means having a fluid passage therein for circulation of washing fluid by said fluid circulating means, and an axial sleeve on said brush supporting means communicating with said passage and having bayonet latching notches formed thereon, said brushing means comprising segmental bristle holding means of arcuate section adapted for assembly as an open ended fluid conveying brush unit in which the segmental parts are joined as a hollow stem, a ferrule for attachment to one end of the assembled hollow segmental parts, and means for anchoring the segmental parts in assembly to the ferrule comprising stud projections from the ferrule, said stud projections and ferrule comprising a bayonet latch engageable with the sleeve and notches of the brush supporting means, said brush stem having an opening therein communicating with the interior of the tumbler for circulation of washing fluid along the interior of the tumbler and through the brush stem.

13. In a washing machine of the character described, a tank for washing fluid, a spindle extending upwardly into said tank, an ejector on said spindle adapted for rotation therewith, said ejector having an axial passage and a radial passage in communication therewith terminating adjacent the periphery of the ejector, a side inlet in the radial passage, a brush, said brush comprising a hollow stem having an opening therein and bristles adapted to sweep the interior of a telescoping tumbler, and means for removably attaching the brush to the ejector with the brush stem and ejector axial passage in communication for circulation of washing fluid within a telescoping tumbler and through the brush stem upon rotation of the spindle.

14. In a washing machine of the character described, a tank for washing fluid, a spindle extending upwardly into said tank, a washing unit comprising an ejector positioned on said spindle and adapted for rotation therewith, said ejector having an axial passage and a radial passage in communication therewith terminating adjacent the periphery of the ejector, a side inlet in the radial passage, a brush, said brush having a perforate hollow stem portion attached to the ejector with the stem portion and axial passage in communication, said ejector being adapted to create suction for circulation of washing fluid within the telescoping tumbler and through the brush stem, axial passage, and radial passage upon rotation of the spindle, and means positioned in the tank adjacent the washing unit to restrain movement of the washing fluid by rotation of the ejector.

15. In a washing machine of the character described, a tank for washing fluid, a spindle extending upwardly into said tank, a washing unit comprising an ejector on said spindle adapted for rotation therewith, said centrifugal ejector having an axial passage, and a radial passage in communication therewith terminating adjacent the periphery of the ejector, a side inlet in the radial passage, a brush, said brush having a perforate hollow stem portion attachable to the ejector with the stem portion and axial passage in communication, said ejector being adapted to create suction for circulation of washing fluid within the telescoping tumbler and through the brush stem upon rotation of the spindle, and a plurality of fixed blades extending radially with respect to said spindle and positioned closely adjacent the ejector side inlets to restrain movement of the washing fluid by rotation of the centrifugal ejector.

16. In a washing machine for tumblers and the like, a tank for washing fluid, a brush positioned within the tank and adapted to be telescoped by a tumbler, said brush comprising bristles adapted to sweep the interior of a tumbler, means for rotating the brush, additional brushes rotatable with the first named brush and adapted to sweep the exterior of a tumbler, means for subjecting the interior of a telescoped tumbler to suction for circulation of washing fluid upwardly into the tumbler, and means for circulating washing fluid upwardly on the exterior of a telescoped tumbler.

17. In a washing machine for tumblers and the like, a tank for washing fluid, rotatable vertically positioned brush supporting means positioned within the tank and comprising a central brush attachment and a concentrically related cylindrical sleeve for telescoped reception of an inverted tumbler, brushes positioned on said sleeve and adapted to sweep the exterior of a tumbler, said sleeve and brushes affording a centrifugal action for circulating washing fluid upwardly on the exterior of a tumbler, an axially positioned brush on said attachment, said axially positioned brush comprising a perforate hollow stem portion, and means for subjecting the hollow brush stem to suction for circulating of washing fluid upwardly into the telescoped tumbler and through the brush stem.

18. In a washing machine of the character described, a tank for washing fluid, a rotatable spindle extending vertically into said tank, an ejector mounted on said spindle and affording brush supporting means, a cylindrical shell attached to said ejector and extending axially with respect to said spindle for telescoped reception of an inverted tumbler, a brush mounted on said shell and adapted to sweep the exterior of a tumbler, said brush and shell affording a centrifugal action for circulating washing fluid upwardly on the exterior of a tumbler, a brush mounted on said ejector on the axis thereof, said axially positioned brush having bristles adapted to sweep the interior of a telescoping tumbler and having a perforate hollow stem communicating with the ejector for circulation of washing fluid upwardly into a telescoped tumbler and through the brush

stem by suction created upon rotation of the ejector.

19. In a washing machine for tumblers and the like, a tank for washing fluid, a rotatable spindle extending vertically into said tank, a member removably attached to said spindle in driving relationship and vertically withdrawable therefrom, said member incorporating an ejector operable upon rotation of said member for fluid circulation, a cylindrical sleeve on said member extending axially of the spindle and terminating above the normal fluid level of the tank for telescoped reception of an inverted tumbler, brushes on the inner face of said sleeve adapted to sweep the exterior of a tumbler, an axially positioned brush removably attached to said member in driving relationship and vertically withdrawable therefrom, said brush having a hollow stem communicating with said ejector and bristles adapted to sweep the interior of a telescoping tumbler, said brush stem having an opening therein to complete the fluid flow path from the tank through the interior of the tumbler to the hollow stem and thence through the ejector to the tank.

20. In a washing machine for tumblers and the like, a tank for washing fluid, vertically extending brush means in the tank adapted to receive a tumbler in inverted telescoping engagement with the lower open end submerged, and fluid circulating means communicating with spaced points within the tank one of which is within the telescoped tumbler for circulating washing fluid from the tank along the interior wall of the telescoped tumbler toward the bottom thereof and for returning such fluid from adjacent the tumbler bottom to the washing fluid supply in the tank.

21. In a washing machine for tumblers and the like, a tank for washing fluid, vertically extending brushing means in said tank adapted to receive a tumbler in inverted telescopic engagement with the lower open end submerged, a sleeve member in said tank concentrically related to and rotatable with the brushing means, means rotatable with said sleeve member for circulating washing fluid upwardly on the exterior of a telescoped tumbler toward the tumbler bottom, and said rotatable means including additional means for circulating washing fluid upwardly on the interior of a telescoped tumbler to the tumbler bottom.

22. In a washing machine for tumblers and the like, a tank for washing fluid, means for subjecting a tumbler submerged in the tank to a rotary brushing action comprising a rotatable shaft and brushes operated thereby, and suction creating means for subjecting the interior of the tumbler to suction for causing the washing fluid to flow into and to fill the interior of the tumbler during the brushing action, said suction creating means being attached to said shaft and operated by rotation thereof.

23. A tumbler scrubbing device for use in a tank adapted to contain a quantity of washing fluid, comprising in combination a rotary shaft for positioning in said tank, brushing means carried by said shaft and adapted to receive a tumbler in inverted telescoping engagement with the lower open end submerged, a housing member surrounding said brushing means and having a lower inlet opening located to be beneath the normal fluid level in the tank during use and an upper discharge opening spaced from said inlet opening, and pumping means carried by the shaft and operated by rotation of the shaft, said pumping means being located within said housing and adjacent said inlet opening whereby during operation of said device the action of the pumping means and brushing means causes sub-surface fluid to flow from the tank through said inlet opening and into the brush zone and enforced discharge of recirculated fluid though said discharge opening back into the tank while avoiding recirculation of surface fluid in the tank with its entrained grease and impurities.

24. A tumbler scrubbing device for use in a tank adapted to contain a quantity of washing fluid having a normal fluid level below the upper end of said device when installed in said tank, comprising in combination a hollow housing to be located within said tank, scrubbing brushes mounted within said housing, said housing having a lower inlet opening communicating with said fluid in said tank beneath the surface level of said fluid for flow of fluid from beneath the surface of the body of fluid in the tank and upwardly into said housing to provide water for cleaning and flushing the tumbler and the brushes while avoiding direct recirculation of the surface water and contained grease and impurities back into the brushes, pumping means associated with said inlet opening and including a rotatable member for causing flow of said washing fluid from beneath the surface of the fluid in said tank through said inlet opening and into said housing, the scrubbing means comprising a central brush and an opposed side brush for engaging the inner and outer side surfaces respectively of a tumbler, means for causing rotation of said rotatable means and of said scrubbing means within fluid thus introduced into said housing, said housing constructed to extend above the normal fluid level within said tank and having an upper opening located above said brushes for discharge of the washing fluid outwardly from said housing and beyond the wall thereof into the body of fluid within said tank, to thus prevent flow of surface water and entrained grease and impurities from the tank into the housing and brushes.

25. A tumbler scrubbing device for use in a tank adapted to contain a quantity of washing fluid, comprising in combination a hollow housing to be located within said tank, scrubbing means mounted within said housing, said housing having a lower inlet opening for communicating with the fluid in said tank beneath the normal surface level of said fluid for flow of fluid from beneath the surface of the body of fluid in the tank and upwardly into said housing to provide a continuously moving stream of subsurface fluid for scrubbing said brushes and cleaning and flushing the same while avoiding recirculation of surface fluid and its contained grease and impurities, pumping means positioned adjacent said inlet opening for causing said flow of said washing fluid from beneath the surface of the body of fluid and through said inlet opening into said housing, the scrubbing means comprising a central brush and an opposed side brush for engaging the inner and outer side surfaces respectively of a tumbler, means for rapidly rotating said pumping means and scrubbing means about a common axis, and said housing having an upper opening for discharge of withdrawn washing fluid therefrom into the body of fluid within said tank.

26. A tumbler scrubbing machine comprising in combination a tank for washing fluid, a hollow housing within said tank, scrubbing brushes mounted within said housing, said housing having a lower inlet opening communicating with said fluid in said tank beneath the surface level

of said fluid for flow of fluid from beneath the surface of the body of fluid in the tank and upwardly into said housing to provide fluid for washing the tumbler and scrubbing said brushes and cleaning and flushing the same while avoiding direct recirculation of the surface portion of the fluid in the tank and its contained grease and impurities back into the brushes, pumping means associated with said opening and including a rotatable member for causing flow of said washing fluid from beneath the surface of the body of fluid through said inlet opening into said housing, the scrubbing means comprising a central brush and an opposed side brush for engaging the inner and outer side surfaces respectively of a tumbler, means for rapidly rotating said scrubbeing means about a vertical axis within the fluid thus introduced into said housing said housing extending above the normal fluid level within said tank and having an upper opening located above said brushes for discharge of the washing fluid outwardly from said housing and beyond the wall thereof into the body of fluid within said tank, to thus prevent flow of surface water and entrained grease and impurities from the tank back into the housing and brushes, and a flange surrounding the upper end of said housing and spaced beyond said discharge opening.

DAVID A. MEEKER.
HERBERT L. JOHNSTON.

CERTIFICATE OF CORRECTION.

Patent No. 2,158,904. May 16, 1939.

DAVID A. MEEKER, ET AL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, second column, line 29, for "conecting" read connecting; page 2, first column, line 12, for "member 5" read member 55; page 3, first column, line 26, after "flow" insert in; and second column, line 10, claim 4, for "macihne" read machine; page 4, second column, line 55, claim 17, for "circulating" read circulation; page 5, second column, line 6, claim 23, for "though" read through; page 6, second column, line 1-2, claim 26, for "scrubbeing" read scrubbing; line 3, same claim, after "housing" insert a comma; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 27th day of June, A. D. 1939.

Henry Van Arsdale

(Seal) Acting Commissioner of Patents.

of said fluid for flow of fluid from beneath the surface of the body of fluid in the tank and upwardly into said housing to provide fluid for washing the tumbler and scrubbing said brushes and cleaning and flushing the same while avoiding direct recirculation of the surface portion of the fluid in the tank and its contained grease and impurities back into the brushes, pumping means associated with said opening and including a rotatable member for causing flow of said washing fluid from beneath the surface of the body of fluid through said inlet opening into said housing, the scrubbing means comprising a central brush and an opposed side brush for engaging the inner and outer side surfaces respectively of a tumbler, means for rapidly rotating said scrubbeing means about a vertical axis within the fluid thus introduced into said housing said housing extending above the normal fluid level within said tank and having an upper opening located above said brushes for discharge of the washing fluid outwardly from said housing and beyond the wall thereof into the body of fluid within said tank, to thus prevent flow of surface water and entrained grease and impurities from the tank back into the housing and brushes, and a flange surrounding the upper end of said housing and spaced beyond said discharge opening.

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CERTIFICATE OF CORRECTION.

Patent No. 2,158,904. May 16, 1939.

DAVID A. MEEKER, ET AL.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 1, second column, line 29, for "conecting" read connecting; page 2, first column, line 12, for "member 5" read member 55; page 3, first column, line 26, after "flow" insert in; and second column, line 10, claim 4, for "macihne" read machine; page 4, second column, line 55, claim 17, for "circulating" read circulation; page 5, second column, line 6, claim 23, for "though" read through; page 6, second column, line 1-2, claim 26, for "scrubbeing" read scrubbing; line 3, same claim, after "housing" insert a comma; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 27th day of June, A. D. 1939.

Henry Van Arsdale

(Seal) Acting Commissioner of Patents.